

WHAT IS CLAIMED IS:

1. An Internet telephone system for voice communication between a telephone subscribing to a first voice network and a telephone subscribing to a second voice network via a network using an Internet protocol, comprising:

a plurality of label switch routers which constitute said network and use a label switching technique, respectively;

a first media gateway which is connected across a first specific label switch router among said plurality of label switch routers and a first signaling transfer point connected to said first voice network, and assembles/resolves a VoIP packet;

a second media gateway which is connected across a second specific label switch router among said plurality of label switch routers and a second signaling transfer point connected to said second voice network, and assembles/resolves a VoIP packet;

a path control unit which checks whether or not there is a path having a residual band larger than a band necessary for transferring said VoIP packet between said first specific label switch router and said second specific label switch and, when it is determined that there is not said path, sets a new path having a band that is equal to or more than a double band of said necessary band; and

a packet control unit which is connected to said path control unit, and instructs said first media gateway and said second media gateway to transfer said VoIP packet via the path that is checked or set by said path control unit.

2. An Internet telephone system according to Claim 1, wherein said path to be set by said path control unit has a band that is equal to or more than a hundred times of said necessary band.

3. An Internet telephone system according to Claim 1, further comprising

a route control unit which controls said label switch router.

4. An Internet telephone system according to Claim 3, wherein said route control unit is provided to each label switch router.

5. An Internet telephone system according to Claim 3, wherein said route control unit is connected to all label switch routers.

6. A path setting method of setting a path to which a band is ensured on a network using an Internet protocol connected between a first voice network and a second voice network to execute voice communication between a telephone subscribing to said first voice network and a telephone subscribing to said second voice network, comprising the steps of:

determining whether or not there is a path having a residual band larger than a band necessary for transferring a VoIP packet between two edge label switch routers by a path control unit; and

setting a new path having a band that is equal to or more than a double band of said necessary band between said two edge label switch routers by said path control unit, when it is determined that there is not said path.

7. A path setting method according to Claim 6, wherein said new path set by said path control unit has a band that is equal to or more than a hundred times of said necessary band.

8. A call control apparatus for setting a path to which a band is ensured on a network using an Internet protocol connected to a first voice network and a second voice network to execute voice communication between a telephone subscribing to said first voice network and a telephone subscribing to said second voice network, comprising:

a path control unit which determines whether or not there is a path having a residual band larger than a band necessary for transferring a VoIP packet between two edge label switch routers and, when it is determined that there is not said path, sets a new path having a band that is equal to or more than a double band of said necessary band between said edge label switch routers; and

a packet control unit which controls a media gateway connected to said two edge label switch routers to transfer said VoIP packet via a path having said residual band or said new-set path.

9. A call control apparatus according to Claim 8, wherein the path to be newly set by said path control unit has a band of a hundred times of said necessary band.

10. A router used for a network using an Internet protocol connected between a first voice network and a second voice network to implement voice communication between a telephone subscribing to said first voice network and a telephone subscribing to said second voice network, wherein

said router sets a path having a band that is equal to or more than a double band of a band necessary for transferring a VoIP packet in accordance with control by a call control apparatus, thereby establishing a plurality of connections in said path.

11. A router according to Claim 10, wherein said path has a band that is equal to or more than a hundred times of said necessary band.

12. A router according to Claim 10, wherein said router is a label switch router.

13. A computer program product for implementing a call control apparatus for setting a path to which a band is ensured on a network using an Internet protocol connected between a first voice network and a second voice network to execute voice communication between a

telephone subscribing to said first voice network and a telephone subscribing to second voice network, wherein said computer program product comprises the steps of:

determining whether or not there is a path having a residual band larger than a band necessary for transferring a VoIP packet between two edge label switch routers and setting, when it is determined that there is not said path, a new path having a band that is equal to or more than a double band of said necessary band between said label switch routers; and

controlling a media gateway connected to said two edge label switch routers to transfer said VoIP packet via the path having the residual band larger than said necessary band or said new-set path.

14. A program according to Claim 13, wherein the path to be newly set has a band of a hundred times of said necessary band.